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ranging from 5563 to 5580A. As the mean value, 5571.6A, agreed well with the results obtained by Vogel (5572), Copeland (5573), Huggins (5571), and other experienced observers, and as there was no promise that measures made on our faint aurorae could compare in value with those made by astronomers who are favored with brilliant aurorae, I did not pursue the subject further. We possessed no adequate spectrograph at that time.

August 30, 1917.

W. W. CAMPBELL.

#### A REMARKABLE COINCIDENCE\*

The most remarkable coincidence known to me relates to the discovery of Perrine's second comet. I published the facts in the case in *The Observatory*, Vol. 26, pp. 293-4, 1903, where they were made familiar to many astronomers. On describing the coincidence recently to a group of my colleagues in other sciences they urged strongly that I republish the facts in a journal of more general character, and thus make known the occurrence to students in other subjects.

Professor Charles D. Perrine of the Lick Observatory staff discovered the first of his many comets on November 17, 1895. This was Comet *c* 1895. He observed it night after night until December 20, 1895, when it was lost to sight in the glare of the Sun's rays. The orbit of the comet was accurately determined, and its path for the early months of 1896 was computed and published in advance. I had the pleasure of assisting Mr. Perrine when he first looked for its reappearance from behind the Sun, on the morning (just before dawn) of January 30, 1896. He found it at once, in the predicted position, and as an object easily visible in medium-sized telescopes. Because the comet was following its predicted path so closely we decided not to squander money in cabling the fact of its reobservation to European observers. Perrine observed his comet morning after morning as weather permitted, for fifteen days, until on February 14 a cablegram was received from Kiel, Germany, announcing that Lamp had re-observed Perrine's Comet *c* 1895 that morning. The cablegram in cipher code was received at the Lick Observatory by one of the astronomers, in perfect order as shown by the control word; but in converting the cabled right ascension of the comet from degrees and minutes of arc into hours and minutes of time the translator made an error

\*Reprinted from *Science*, July 13, 1917.

of 24 minutes of time, equivalent to  $6^\circ$  of arc. The *erroneous* translation was handed to Perrine. He compared this with what he knew to be the real position of Comet *c* 1895, by virtue of his observations in the preceding half month, and saw that there was a discrepancy of about 24 minutes of time. Inasmuch as the check word in the cablegram was correct he judged that the object observed by Lamp in Kiel must be a different comet from his own. The following morning was clear and he pointed the 12-inch telescope to the position that was handed to him. In looking thru the finder of the telescope *he saw an eighth magnitude comet in the field of view*. This did not surprise him. He observed the position of the new comet, and we transmitted the observation by telegraph and cable, as usual, as belonging to a new comet discovered by Lamp in Kiel. This new object was at once known as Comet *a* 1896. Naturally considerable mystery existed (see the *Astronomical Journal*, Vol. 16, p. 56, 1896, and *Astronomische Nachrichten*, Vol. 139, pp. 365-6, 1896). Several weeks elapsed before the tangled situation was unravelled at Mount Hamilton by our looking up the original cipher cablegram and detecting the error of 24 minutes in the conversion of arc into time, made after the cipher message had been translated and checked.

It is a surprising fact that the error should have directed the telescope upon an unknown comet, but the surprise increases when we consider another attendant fact. The new comet was moving amongst the stars very rapidly; more than  $2^\circ$  east in right ascension and more than  $3^\circ$  north in declination, daily. When the cablegram was written in Kiel on the morning of the 14th the new comet was six or seven degrees from the cabled position. When the erroneous position was handed to Perrine on the morning of the 14th the new comet was three degrees from that position. When the first opportunity came, the following morning, to examine the erroneous position, the rapidly-traveling comet had moved into that position. Had the telescope been pointed to that position on any other morning whatsoever, the celestial visitor would have been far outside the finder field, and the chances are fair that it would have come and gone unseen. The cabled Kiel position of re-observation of Comet *c* 1895 and Perrine's discovery position of Comet *a* 1896 were:

Comet <i>c</i> 1895 Feb. 14 R. A. =	$19^h 45^m$	Dec. =	$-2^\circ 23'$	(correct translation)
Comet <i>c</i> 1895 Feb. 14 R. A. =	19 21	Dec. =	-2 23	(erroneous translation)
Comet <i>a</i> 1896 Feb. 15 R. A. =	19 22	Dec. =	-2 49	

The angular radius of the finder field was about  $1^{\circ}.3$ .

I doubt whether another case of coincidence as remarkable as this one is on record in the literature of astronomy.

Lick Observatory, 1917, June 4.

W. W. CAMPBELL.

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CHANGES IN THE PERSONNEL OF THE BERKELEY ASTRONOMICAL  
DEPARTMENT FOR THE FIRST HALF YEAR, 1917-18.

Dr. S. Einarsson and Dr. F. J. Neubauer devote half of their time to the work of the Department and half time to the Navigation School of the United States Shipping Board.

Mr. Wallace Campbell resigned his Teaching Fellowship to accept a commission in the Engineering Corps of the National Army.

Mr. Carlos S. Mundt has been appointed Teaching Fellow to fill the vacancy caused by Mr. Campbell's resignation.

Mr. H. M. Jeffers has been appointed assistant in the Department on part time.

Miss A. L. Beck has been appointed assistant and Miss D. L. Schwan reader in the Department.